

Sand Key Lighthouse
7 mis. SW of Key West
Sand Key
Monroe County
Florida

HABS No. FL-189

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44-KEY,
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PHOTOGRAPHS

HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
Heritage Conservation and Recreation Service
Department of the Interior
Washington, D.C. 20243

HISTORIC AMERICAN BUILDINGS SURVEY

HABS No. FL-189

SAND KEY LIGHTHOUSE

Location:

Seven miles southwest of Key West, Sand Key,
Monroe County, Florida.

U.S. Army Topographic Command Map,
Key West Quadrangle (1:250000 scale),
Universal Transverse Mercator
Coordinates: 17.411145. 2704545.

Present Owner
and Occupant:

United States Coast Guard.

Present Use:

Lighthouse.

Significance:

This is one of the most important lights on the coast of the United States. It was first lighted on July 20, 1853, and is the second oldest of the six iron screw pile light houses which extend from Fowey Rocks to Sand Key to mark off-shore keys, shoals, and reefs which are hazardous to coastal shipping. It is the only one of these lights not standing entirely in water. J.W.P. Lewis, one of the most noted American designers of lighthouses, designed the structure. The lighthouse possesses both historical and technological interest.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1853.
2. Designer: J.W.P. Lewis, Civil Engineer, Boston.
3. Original and subsequent owners: Part of the land was acquired by the United States Government in 1821 through the Adams-Onis Treaty by which Spain ceded Florida to the United States.
4. Builder, contractor, suppliers: Constructed under the direction of the Bureau of Topographical Engineers, Lt. George C. Mead in charge of construction. The name of a supplier, John F. Riley Ironworks, Charleston, S.C. is inscribed on the top level of the balustrade at the southwest corner.
5. Original plan and construction: The structure is a pyramidal skeletal tower, with enclosed spiral stair and rectangular dwelling, built on 17 pilings of wrought iron 8" in diameter, with heli-coidal screws which were bored into the sand and coral 10' below the water. Exterior pilings rest on cast iron disks 4' in diameter on a bed of concrete. The tower stands 132' above sea level.

6. Alterations and additions: An iron stairway and a keeper's dwelling were built in 1874. This iron stairway was removed in recent years to prevent vandalism. The original Fresnel Lighting Apparatus has been replaced by a modern battery operated light.

B. Historical Events and Persons Connected with the Structure:

The original brick conical tower, keeper's quarters, dock, etc., were completely destroyed in the hurricane of 1846. A light ship was stationed here until 1853, when the iron work tower was completed. J.W.P. Lewis who designed this tower was one of the most noted American designers of lighthouses. Lt. George B. Meade, in charge of the construction, was also responsible for Carysfort Light. Ten years later he was in command of the Union forces at Gettysburg.

C. Sources of Information:

1. Original architectural drawings:

Sand Key, Florida, Lighthouse.

Lighthouse Service original drawings, Folder of Plans,
7th Lighthouse District, Record Group 26, National Archives
and Records Service, Washington, D.C.

- a. Five prints (black on white heavy paper) of elevation, plans and details of the Keeper's Dwelling for Sand Key Lighthouse. (Unsigned). Five sheets.
"Office of the Light House Board, September 1875"
- b. Four drawings of various details of the lighthouse, including "Details of Oil Room Fixtures," "Stair Mantle" and "Water Tanks". (Two sheets)
- c. Drawings of the Lantern and Details of Lantern Elevation and Section, Details of Roof, etc. Six sheets.
Signed: JWP Lewis, Engineer
Phila. March 30, 1852.
- d. Topographical Survey, Sand Key Light Station, Florida. 1893.
- e. "Lantern and Lens Apparatus, Sand Key L.S., Fla."
"Office of Light House Engineer, 7th and 8th Districts, Mobile, Ala., Jan. 22, 1908. (Shows cross section diagram of light, and time from point to point on lens). Insert at upper left shows elevation of lantern. One sheet.

2. Old views:

Photograph dating to before 1893, copy negative; 26-LG-33-17,
National Archives and Records Service, Washington, D.C.

Photocopy of color post card circa 1907 showing Lighthouse and
Weather Bureau Station which was later demolished by a hurricane.

3. Bibliography:

Lewis, J.W.P., letter to Col J.J. Albert, Chief of Bureau of U.S. Topographical Engineers, June 13, 1850; Reports, Specifications, etc. 1848-1855. Bureau of Lighthouses, Sand Key, Florida, Lighthouse. National Archives and Records Service, Washington, D.C.

Meade, Lt. George, Report, July 3, 1853 and August 27, 1853; Report on Repairs, Estimates of George Meade to Capt. E.L.B. Hardcastle, January 6, 1854, p. 140; Reports, Specifications, etc. 1848-1855, Sand Key Florida Lighthouse, Record Group 26, National Archives and Records Service, Washington, D.C.

Sand Key, Florida, Lighthouse, Clipping File, Record Group 26, National Archives and Records Service, Washington, D.C.

"Specifications for Constructing, and erecting one Lighted Beacon in Key West Harbor, Florida, and the Removal of two Lighted Beacons in Choctawhatchee Bay and their Re-Erection in Hawk Channel, Florida." Seventh Light House District, 1901. Specifications for Lighthouse Structures E to L. Record Group 26, National Archives and Records Service. Washington, D.C. Includes two pages of specifications for "Lighted Beacon on Middle Ground of N.W. Passage of Key West Harbor."

Prepared by: Betty M. Bruce
Old Island Restoration
Foundation, Inc.
Historian
HABS Key West Project
August 1967

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: Sand Key Light House is typical of those lights built circa 1850 to mark off-shore keys, shoals and reefs which were hazardous to coastal shipping. The light house is composed of keeper's quarters, spiral stairway to an observation platform and the watch room and lantern housing. A skeletal tower of inclined cast iron pipe columns with wrought iron tension and compression members supports these elements.
2. Condition of fabric: Generally good.

C. Description of Exterior:

1. Over-all dimensions: The height of the total structure is approximately 132"; the tower tapers from 50' x 50' at its base to a 19' x 19' cast iron entablature supporting the watch room and lantern housing.
2. Foundation: Wrought iron piles screwed into sand and coral (not visible at time of survey) capped with concrete, circular iron web spread footing over cap.
3. Tower: Four approximately 16' bays at each side of outer surface, one bay each side in center, central column to support spiral stairway and encasing cylinder. Columns slope inwards at approximately 10° from the vertical in six sections, cast iron pipe approximately 8" in diameter, connected by coupling boxes or sockets. Coupling boxes are cast iron, serve as joints between column sections and as connectors for tension and compression struts of the tower; projections from the coupling boxes are hoods and flanged knobs to receive secondary members. Compression and tension struts are 3" and 1 1/2" wrought iron rods, with hook, turn buckle and bolted connections.
4. Keeper's quarters: Located in the second section of the tower, the keeper's quarters is 30' x 30' with platform extending approximately 3'-0" on all sides; cast iron or steel beams, sheet metal and wood deck. Walls faced with sheet metal plates, each panel with ventilator-scoop, panel with fresh air scoops cover windows and door; wood board cornice. Ladder from grade to platform removed, in ruins at base of compartments and storage for oil and water; floor, walls and ceiling of wood strips. Flat roof, membrane covering.
5. Spiral stairway from keeper's quarters to watch room: 7' diameter spiral stairway of cast iron, central post, perforated treads and risers; coupling box above foundation, pipe column and flanged cap to receive stairway and housing at center of the keeper's quarters; encasing cylinder of four flanged sections of riveted steel, two windows each section.
6. Watch room: Located at the observation platform level, this round (12' in diameter) space is directly below the lantern housing; originally contained the machinery for revolving the light, spare lantern, oil, etc.; a ladder provides access to the lantern housing; doorway to the observation platform; registers for ventilation.
7. Observation platform: A perforated cast iron beam occurs at tops of columns as an entablature base for the observation platform; a cast iron balustrade surrounds the deck; a corner post is inscribed "John F. Riley Iron Works, Charleston, S.C."

8. Lantern housing: This circular space is enclosed with triangular sheets of plate glass in three tiers, forming a diagonal system to minimize light interception; fragments of a platform extend outwards from floor level; this space now houses a modern battery operated light (500 mm lens, 12 volt, 3.05 amp lamp, sun relay operator, 16 miles visibility) which replaced the original Fresnel lighting apparatus. A cast iron dome roof and finial serving as a vent and lightening arrestor complete the structure.

C. Site:

This lighthouse is located on Sand Key, approximately seven nautical miles South 50° West of Key West, Florida, where a string of off-shore reefs, shoals and keys parallel the coast and present hazards to shipping. Sand Key is a bank of sand and coral less than an acre in area, surrounded by coral and stone outcrops. A wood dock over iron and wood framing and a boat house extend to the west. The foundations are part in sand, part in water, surrounded by fragments of original members replaced by modern elements, iron stairway, pipe, etc. There is no vegetation on the key.

Prepared by: F. Blair Reeves, AIA
Supervisory Architect
HABS Key West Project
August 1967

PART III. PROJECT INFORMATION

These records were prepared in 1967 during a summer project jointly sponsored by the Old Island Restoration Foundation, Inc. of Key West, and the Historic American Buildings Survey. Twenty-two structures were recorded, ranging from commercial structures, residences and hospitals to a convent, a lighthouse, and the Memorial to the Victims of the Disaster of the U.S. Battleship Maine.

The project was under the direction of F. Blair Reeves, AIA, Associate Professor, Department of Architecture, University of Florida. Measured drawings were prepared by student architects John D. Davenport and John F. Grimm of Texas A. and M. University, and John O. Crosby of the University of Florida. Mrs. Betty M. Bruce of the Old Island Restoration Foundation, Inc., and Professor Reeves were responsible for the historical and architectural data. They were assisted by members of the Foundation. J. Franks Brooks, Photographer, of Key West, supplied the photographs.